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EXAMINER	
SHAH, PARAS D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/514,413	CAMPBELL ET AL.	
	Examiner	Art Unit	
	PARAS SHAH	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/28/2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to the Amendments and Arguments with the RCE filed on 08/28/2008. Claims 1-4, 7-11, 13-17, and 20-23 are pending and have been examined, with claims 5, 6, 12, 18, and 19 being cancelled. The Applicants' amendment and remarks have been carefully considered, but they are not persuasive and do not place the claims in condition for allowance.

2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/28/2008 has been entered.

Response to Amendments and Arguments

4. Applicant's arguments (pages 12-14) filed on 08/28/2008 with regard to claims 1-4, 7-11, 13-17, and 20-23 have been fully considered but they are moot in view of new grounds for rejection

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the limitation of "local variance of changes of the frequency spectrum is a local minimum." This is seen in the Applicants Specification (see PGPub, [0069], where local variance on the time axis is performed based on the delta cepstrum (cepstral coefficients). The local minimum is derived from the cepstral coefficients and not the frequency spectrum distribution information.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 3, 7, 10, 13, 16, 20-22, 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, in claim 3, lines 5, it is unclear as to what is meant by "distribution based on estimated value of formant frequency," whether the distribution is an energy distribution or a distribution of formant values over time. Further, in lines 8, it is unclear as to what is meant by "distribution on the time axis of local variance of spectral change." It is unclear as to whether this

spectral change is a change in energy or based on changes in amplitude from Cepstrum coefficients. Hence, for the purposes of compact prosecution, the former limitation was interpreted to mean distribution of formant values over time and the latter limitation was Interpreted to be changes in peaks from then delta cepstrum calculated. Similarly, claims 7, 10, 13, 16, and 20-22 recite similar limitations and are rejected for the same reasons as stated above.

9. Claims 8-10, 11, 13, and 21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear from the Applicant's Specification of what is meant by "program product." The closest interpretation in paragraph [0056]and [0057] describe a software or program with RAM executed by a CPU. However, there is no indication of what the program product encompasses. For the purposes of compact prosecution such limitation was interpreted to mean solely a program.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1and 7 are rejected under 35 U.S.C. 101 because the claims appear to be directed to a software embodiment and not to a hardware embodiment, where a machine claim is directed towards a system, apparatus, or arrangement. The claim appears to be directed towards a software embodiment as stated in the published

application, paragraph [0062], where Figure 3, "represent the program of the present embodiment as an apparatus" shows the program as an apparatus.

12. Claims 2, 3, 4, 20, and 23 are rejected as being dependent upon a rejected base claim.

13. Claims 14-17 and 22 are drawn to non-statutory subject matter. The stated claim falls within the statutory category of process. However, in order for the process to be statutory the process must be 1) tied to another statutory class or 2) transform underlying subject matter to a different state or thing. Neither of these requirements is met by the claim and thus the method is not a patent eligible process under 101. the claims are neither tied to another statutory class as there is no positively recited structural component to tie it to another statutory category. Further, the claimed limitations pertain to determining a specific section in speech signal and does not result in a transformation as such claim is directed to an abstract idea for determining a portion of a speech waveform.

14. Claims 15-17 and 22 are rejected as being dependent upon a rejected base

15. Claims 8-10, 11, 13, and 21 are rejected under 35 U.S.C. 101 because the claimed invention is to a "computer program product" *per se* as recited in the preamble and as such is non-statutory subject matter. Reference is made to paragraphs [0057], where the combination of software and computer-readable media is made, however there is no definition in the specification as to what the program product is. See MPEP 2106.01 [R-5]. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of

causing functional change in the computer. See e.g., Warmerdam, 33 F.3d at 1361, 31, USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between data and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. The Applicant is suggested to use language such as: "A computer readable-storage medium storing a program that when executed by a computer causes the computer to ..." The further dependent claims fail to overcome the preceding 35 U.S.C. 101 rejections, and thus, are also rejected as being directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 1, 4, 8, 11, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Lea *et al.* ("Algorithms for acoustic prosodic analysis") in view of Schafer et al. ("System for Automatic Formant Analysis of Voiced Speech") in view of

Schmidbauer ("Syllable-based Segment-hypotheses Generation in Fluently spoken speech using Gross Articulatory features.).

As to claims 1, 8, and 14, Lea *et al.* teaches an apparatus for determining, based on speech waveform data, a portion representing a feature of the speech waveform, comprising:

extracting means for calculating (see Figure 1, sonorant energy filter and energy calculation), from said data, distribution of an energy of a prescribed frequency range of said speech waveform on a time axis, and for extracting, among various syllables, a first portion of said speech waveform (See page 42.7.1, Figure 1, a speech waveform is input and energy calculations are made for specific frequency ranges (prescribed frequency ranges) (sonorant energy filter and very low frequency filter)), that is generated stably by a source of said speech waveform, based on the distribution of energy and pitch of said speech waveform (see Figure 1) (e.g. From the figure, speech is input into the system. Then, energy calculation is done to determine the syllable units (voicing). Further, a stable range is determined from the boundary that is determined by pitch. (see page 42.7.1, right column, last paragraph-page 42.7.2, left column, lines 1-12));

estimating means for calculating (See Figure 1, energy calculation), from said data, distribution of said speech waveform on the time axis, and estimating, based on the distribution of spectrum, a second portion (see page 42.7.2, left column sec. 3, 1st full paragraph-right column, each frame of speech (second

portion is the portion after the first portion (or frame) has been input) is analyzed to determine voicing and also energy values are being calculated for each window) of said speech waveform for which change is well controlled by said source (see Figure 2 and page 42.7.3, right column, 1st full paragraph) (e.g. In the cited section two types of methods are compared. A speech spectrum is obtained for both methods in order to determine the boundary for each syllable, which is well controlled. The well-controlled portions is determined of the boundary extracted (e.g. reliable));

However, Lea does not specifically teach the distribution being of a frequency spectrum distribution.

Schafer does teach the use of a frequency spectrum distribution (see page 641, left column, last paragraph before section C. , where the spectral envelope is computed, as a function of frequency and formants are estimated, as shown in Figure 11).

It would have been obvious to one of ordinary skilled in the art at the time the invention as made to have modified the separation of speech signal into quasi-syllables as taught by Lea with calculating a frequency distribution as taught by Schafer for the purpose of estimating formants from voiced speech (see Schafer, Abstract)

However, Lea in view of Schafer does not specifically teach the determining the portion representing a feature.

Schmidbauer does teach

means for determining the portion representing a feature of said speech waveform based on the first portion extracted by said extracting means the second portion estimated by said estimating means (page 10.9.3, left column, 3rd full paragraph-right column, line 18) (e.g. The cited portion discloses the syllabic nuclei boundary estimate and then extraction of stable regions of the syllabic nuclei.)

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have modified the determination of a reliable portion of a speech waveform as taught by Lea in view of Schafer with the inclusion of extracting stable regions as taught by Schmidbauer. The motivation to have combined the references involves the ability to do further processing including context specification and stress pattern of utterances (see page 10.9.1, left column, 3rd full paragraph).

As to claims 4, 11, and 17 Lea in view of Schafer in view of Schmidbauer teach all of the limitations as in claim 1 above.

Furthermore, Lea wherein said determining means includes means for determining a range included in the range extracted by said extracting means, within the range of which change in speech waveform is estimated by said estimating means to be well controlled by said source (see Figure 2 and page 42.7.3, right column, 1st full paragraph) (e.g. Form the figure, the syllables are detected and a range in time is specified as seen ion the frames on the x-axis,

"island of reliability") (e.g. It would have been obvious to extract the frames corresponding to the extracted syllable as defined by the timing in the Figure (e.g. Frames). Further, the use of a voice detector as denoted in Lea will provide a range for voicing compared to unvoiced segments.)

18. Claims 2, 9, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Lea in view of Schafer in view of Schmidbauer as applied to claims, 1, 8, and 14above, and further in view of Mermelstein ("Automatic segmentation of speech into syllabic units").

As to claims 2, 9, and 15, Lea in view of Schafer in view of Schmidbauer teach all of the limitations as in claim 1 above.

Furthermore, Lea teaches wherein said extracting means includes voiced/unvoiced determining means for determining, based on said data, whether each segment of said speech waveform is a voiced segment or not (see page 42.7.1, right column, sect. 2, 1st full paragraph, and Figure 1) (e.g. Voiced and unvoiced determination is made.) of said waveform of energy distribution of the prescribed frequency range of said speech waveform on the time axis (see page 42.7.1, right column, sect. 2, 1st full paragraph, and Figure 1) (e.g. In the cited section a prescribed frequency range is used and dips of energy define minimums.),

Furthermore, Lea teaches the means for extracting that range of said speech waveform which includes, in each syllable, an energy peak in that

syllable within the segment determined to be a voiced segment by said voiced/unvoiced determining means and in which the energy of the prescribed frequency range is not lower than a prescribed threshold value (see page 42.7.1, right column, sect. 2, 1st full paragraph, and Figure 1) (e.g. A threshold is used to determine voiced and unvoiced segments. A frequency range for sonorant energy is defined and since dips are located it is seen intuitively that maximums will occur.)

However, Lea does not specifically teach the minimum of a time distribution waveform.

Mermelstein does teach the means for separating said speech waveform into syllables at a local minimum (see page 881, right column, 1st full paragraph, and Figure 1) (e.g. The minimum of Figure 1 is used to determine and segment syllable.) .

It would have been obvious to one of ordinary skilled in the art at the time the invention as made to have modified the separation of speech signal into quasi-syllables as taught by Lea in view of Schafer in view of Schmidbauer with the use of a time-distribution waveform as taught by Mermelstein. The motivation to have combined the references involves the ability segment of speech into syllable units (see Abstract) more effectively.

19. Claims 3, 10, 16, and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lea in view of Schafer in view of Schmidbauer as applied to claims, 1, 8, and 14above, and further in view of Mizuno (US 5,732,392)

As to claims 3, 10, and 16,Lea in view of Schafer in view of Schmidbauer teach all of the limitations as in claim 1, 8 and 14 above.

Furthermore, Schafer teaches estimation of formant frequency (see page 641, left column, last paragraph before section C. , where the spectral envelope is computer, as a function of frequency and formants are estimated, as shown in Figure 11) and the calculation of a distribution (see Figure 11a-11c, where calculation of formants is shown) based on the estimated value of formant frequency (see Figure 13a, where the formant as a function of time is shown).

However, Schafer does not specifically teach the use of linear prediction for estimating formants. The Examiner however points out that the use of linear prediction for estimating formants is well known in the art (See paper by McCandless, “an algorithm for automatic formant extraction using liner prediction spectra”, 1984).

However, Lea in view of Schafer in view of Schmidbauer do not specifically teach the second calculating means for calculating, based on output from said linear predicting means, distribution on the time axis of local variance of spectral change on the time axis of said speech waveform and means for estimating, based on the distribution of non reliability of based on the estimated value of formant calculated by said first calculating means and the distribution of

variance of local spectral change in said speech waveform calculated by said second calculating means, a portion of said speech waveform in which a change in said speech waveform is well controlled by said source.

Mizuno does teach second calculating means for calculating, based on output from said linear predicting means (see col. 6, lines 28-29, LPC cepstrum is used as a feature vector), distribution on the time axis of local variance of spectral change on the time axis of said speech waveform (see col. 6, lines 29-35, delta cepstrum is obtained from LPC cepstrums as a function of time, A(t)); and

means for estimating, based both on said distribution on the time axis based on the estimated value of formant calculated by said first calculating means (see col. 6, lines 29-30, the speech period determination is based on the LPC cepstrum that is input) and the distribution on the time axis of variance of spectral change in said speech waveform calculated by said second calculating means (see col. 6, lines 29-35, delta cepstrum is computed), a range in which change in the speech waveform is well controlled by said source (see col. 6, lines 42-60, number of peaks that exceed a threshold is determined and compared with the sum total of a threshold to determine the speech period.

It would have been obvious to one of ordinary skilled in the art at the time the invention as made to have modified the separation of speech signal into quasi-syllables as taught by Schafer use of a second calculating means and

determination of a range as taught by Mizuno for the purpose of detecting speech period in a high-noise environment (see Mizuno col. 2, lines 18-21).

As to claims 20-22, Lea in view of Schafer in view of Schmidbauer teaches all of the limitations as in claim 1, 8 and 14 above.

Furthermore, Schafer teaches estimation of formant frequency (see page 641, left column, last paragraph before section C. , where the spectral envelope is computer, as a function of frequency and formants are estimated, as shown in Figure 11) and the calculation of a distribution (see Figure 11a-11c, where calculation of formants is shown) based on the estimated value of formant frequency (see Figure 13a, where the formant as a function of time is shown).

However, Lea in view of Schafer in view of Schmidbauer do not specifically teach the second calculating means for calculating, based said speech waveform, distribution on the time axis of local variance of spectral change on the time axis of said speech waveform and means for estimating, based on the distribution of non reliability of based on the estimated value of formant calculated by said first calculating means and the distribution of variance of local spectral change in said speech waveform calculated by said second calculating means, a portion of said speech waveform in which a change in said speech waveform is well controlled by said source.

Mizuno does teach second calculating means for calculating, based on said speech waveform (see col. 6, lines 28-29, LPC cepstrum is used as a

feature vector), distribution on the time axis of local variance of spectral change on the time axis of said speech waveform (see col. 6, lines 29-35, delta cepstrum is obtained from LPC cepstrums as a function of time, A(t)); and

means for estimating, based both on said distribution on the time axis based on the estimated value of formant calculated by said first calculating means (see col. 6, lines 29-30, the speech period determination is based on the LPC cepstrum that is input) and the distribution on the time axis of variance of spectral change in said speech waveform calculated by said second calculating means (see col. 6, lines 29-35, delta cepstrum is computed), a range in which change in the speech waveform is well controlled by said source (see col. 6, lines 42-60, number of peaks that exceed a threshold is determined and compared with the sum total of a threshold to determine the speech period.

It would have been obvious to one of ordinary skilled in the art at the time the invention as made to have modified the separation of speech signal into quasi-syllables as taught by Schafer use of a second calculating means and determination of a range as taught by Mizuno for the purpose of detecting speech period in a high-noise environment (see Mizuno col. 2, lines 18-21).

Claims 21 and 22 are rejected similarly as claim 21, as claims 21 and 22 are broader with respect to claim 20.

As to claims 23, Lea in view of Schafer in view of Schmidbauer teaches all of the limitations as in claim 1 above.

Further, Schafer does teach the use of a frequency spectrum distribution (see page 641, left column, last paragraph before section C. , where the spectral envelope is computed, as a function of frequency and formants are estimated, as shown in Figure 11).

Furthermore, Mizuno teaches said estimating means includes means for calculating, from said data, and estimating the second portion, based on the portion where local variance of changes of the frequency spectrum is at a local minimum (see col. 6, lines 29-35, delta cepstrum is computed, where the peaks of the delta spectrum is determined in col. 6, lines 45-55) (e.g. The local minimum occurs at the peaks of the delta cepstrum. The reference determines the period for which the peaks exceed a threshold to determine the portion),.

20. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer in view of Mizuno (US 5,732,392).

As to claims 7 and 13, Schafer teaches estimation of formant frequency (see page 641, left column, last paragraph before section C. , where the spectral envelope is computer, as a function of frequency and formants are estimated, as shown in Figure 11) and the calculation of a distribution (see Figure 11a-11c, where calculation of formants is shown) based on the estimated value of formant frequency (see Figure 13a, where the formant as a function of time is shown).

However, Schafer does not specifically teach the use of linear prediction for estimating formants. The Examiner however points out that the use of linear

prediction for estimating formants is well known in the art (See paper by Mccandless, "an algorithm for automatic formant extraction using liner prediction spectra", 1984).

However, Schafer does not specifically teach the second calculating means for calculating, based on output from said linear predicting means, distribution on the time axis of local variance of spectral change on the time axis of said speech waveform and means for estimating, based on the distribution of non reliability of based on the estimated value of formant calculated by said first calculating means and the distribution of variance of local spectral change in said speech waveform calculated by said second calculating means, a portion of said speech waveform in which a change in said speech waveform is well controlled by said source.

Mizuno does teach second calculating means for calculating, based on output from said linear predicting means (see col. 6, lines 28-29, LPC cepstrum is used as a feature vector), distribution on the time axis of local variance of spectral change on the time axis of said speech waveform (see col. 6, lines 29-35, delta cepstrum is obtained from LPC cepstrums as a function of time, A(t)); and

means for estimating, based both on said distribution on the time axis based on the estimated value of formant calculated by said first calculating means (see col. 6, lines 29-30, the speech period determination is based on the LPC cepstrum that is input) and the distribution on the time axis of variance of

spectral change in said speech waveform calculated by said second calculating means (see col. 6, lines 29-35, delta cepstrum is computed), a range in which change in the speech waveform is well controlled by said source (see col. 6, lines 42-60, number of peaks that exceed a threshold is determined and compared with the sum total of a threshold to determine the speech period.

It would have been obvious to one of ordinary skilled in the art at the time the invention as made to have modified the separation of speech signal into quasi-syllables as taught by Schafer with the use of a second calculating means and determination of a range as taught by Mizuno for the purpose of detecting speech period in a high=noise environment (see Mizuno col. 2, lines 18-21).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chung et al. (US 7,043,430) is cited to disclose speech recognition using tonal modeling by use of islands of reliability.

McCandless ("An Algorithm for Automatic Formant Extraction Using Linear Prediction Spectra", 1974) is cited to disclose formant extraction using linear prediction spectra.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-

1650. The examiner can normally be reached on MON.-THURS. 7:00a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paras Shah/
Examiner, Art Unit 2626

11/17/2008

/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2626